



Office of the Secretary of Defense / Industry Price-Based Acquisition Roundtable, Executive Report



Arthur
Andersen
**Government
Services**

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Introduction

The Under Secretary of Defense (Acquisition and Technology) established a task force to “determine how to implement a price-based approach to acquisition within the Department of Defense.” To this end, Arthur Andersen was retained to conduct an OSD / industry roundtable to explore industry’s use of best business practices in price-based acquisition, and to transfer this knowledge to government participants. For additional information on price-based acquisition, Arthur Andersen’s white paper *Understanding Price-Based Acquisition* is attached as Appendix C.

The roundtable took place on December 15, 1998 in Arlington, Virginia. Fourteen world class companies from both commercial and defense industries were represented, as well as task force participants who represented numerous Department of Defense (DoD) organizations. A list of participants is attached as Appendix A.

To summarize some of the key differences between the DoD acquisition model and the private industry model, we provide the chart on the following page. The information on the chart emerged during the facilitated discussions -- on industry best practices, the case study, and government acquisition paradigms -- that occurred during the roundtable.



Comparison of DoD and Private-Sector Acquisition Models

Subject	DoD Model	Private-Sector Model
Relationship with suppliers	<ul style="list-style-type: none"> ◆ Business offered to many suppliers ◆ Process assumes need for strict oversight of suppliers 	<ul style="list-style-type: none"> ◆ Limited number of suppliers ◆ Process assumes trust between buyers and suppliers
Defining value	<ul style="list-style-type: none"> ◆ Price is frequently the most important element, however DoD does make best value determinations 	<ul style="list-style-type: none"> ◆ Price is one factor, but not the most important one ◆ Other factors include service, time, technology and total system value
Use of cost data	<ul style="list-style-type: none"> ◆ When requested, cost data is certified by suppliers at a designated dollar threshold. 	<ul style="list-style-type: none"> ◆ When requested, cost data is used to determine cost drivers. ◆ Seek to understand cost drivers and the supplier's businesses, partner with suppliers to reduce the cost drivers
Research and development	<ul style="list-style-type: none"> ◆ Invest in technology needs 	<ul style="list-style-type: none"> ◆ Utilize market place and desire for future business to foster creation of needed technology without having to invest in it
Competition	<ul style="list-style-type: none"> ◆ Legal requirement to compete on all major acquisitions 	<ul style="list-style-type: none"> ◆ Compete only when necessary (e.g., major change in market, new technology, 25-40% change in performance of existing suppliers) ◆ Recognize the cost of switching suppliers
Organization	<ul style="list-style-type: none"> ◆ Develop professionals well-trained in rules and regulations of procurement 	<ul style="list-style-type: none"> ◆ Develop professionals well-trained in the market in which they buy and knowledgeable of the supplier's business
Oversight	<ul style="list-style-type: none"> ◆ Audit costs of suppliers 	<ul style="list-style-type: none"> ◆ Benchmark suppliers against performance and continuous improvement targets; i.e., audit processes



Best Practices

During the roundtable, industry participants discussed the processes their companies use in relation to acquisition. Through sharing this information, best business practices emerged and were repeated throughout the roundtable. They are as follows:

- ◆ **Limit suppliers** – Develop relationships with them; recognize cost of switching suppliers; competition does not always yield a better price.
- ◆ **Develop trust between buyers and suppliers** – Private-sector buyers recognize that it is more efficient in the long-term to develop commitments to a limited number of suppliers, learn the business cases of these suppliers, and partner with them to share risk.
- ◆ **Develop “make knowledge”** -- It is impossible to be a smart buyer without having knowledge of your commodity; definition of procurement expertise differs between government and industry (knowing rules vs. knowing commodity) – organize by commodity; “nothing replaces technical competency” in getting good value in acquisitions.
- ◆ **Define your outcome needs** – Getting burdened with design specifications is not efficient. Rather, define the performance needs for what you are buying. Performance based gives room for vendor creativity.
- ◆ **Establish cross-functional buying teams** – Similar to the point above, an integral part of ensuring the value of acquisitions is to develop buying teams that involve many stakeholders – end-users, technical experts, suppliers, etc.
- ◆ **Avoid paying for R&D** – Take advantage of technology currently available; inspire creation of new technology that you want. Let vendors develop for you to create their markets.

Acquisition Paradigms

There are several paradigms that, at first glance, appear to be unique to the government acquisition model. Industry participants viewed five paradigms (or perceived paradigms) of the government acquisition process, and addressed whether industry had a similar paradigm, and any mitigating strategies they used which related to the paradigm.

Legal requirements to bid competitively – notion of competition yielding best value / price.

Industry competes selectively, and tends to use the threat of competition more than actual competition. Industry recognizes the large cost associated with changing suppliers, and that it is expensive for suppliers to bid (which, in turn, drives suppliers’ costs up). For the most part, participants would rather partner with, monitor and nurture a limited number of suppliers than perform competition.

Current government procurement laws and regulations sub-optimize relationships between the procurement community and a few large defense suppliers. Commercial industry recognizes that competition does not always yield best price. The freedom to use competition selectively is critical in order to drive down prices and build solid supplier-buyer relationships at the same time.



One industry participant summarized another point, saying “competition does not get you a better price. We’re telling you that.” A DoD participant noted that, while DoD recognizes the savings from competition, there is no real data on the cost of performing competition.

Socio-economic considerations / public mandate.

Most private companies have self-imposed socio-economic business goals, “because it’s basically good business,” as one industry participant noted. It is useful for the supplier base to roughly mirror the customer base of an organization. One participant discussed the value of strategically building plants in localities where the company wants to expand the customer base. This way, they can provide more business to local suppliers at less cost.

Industry finds there is generally no additional cost associated the strategy of having the supply base mirror the customer base, because the companies do not sacrifice quality or service when pursuing this strategy. All suppliers perform against the same metrics.

Not having knowledge in-house about how to provide the service or make the product.

Business tries never to be in this position. If you are venturing into a new technology and don’t have sufficient expertise, bring in suppliers to help you, or temporarily “stop gap” with a third party.

When one industry participant re-organized procurement along commodity lines, about a third of the workforce left because they didn’t want to transition to this model, a third wanted to try it but required training, and a third were “ready to go right now.”

Oversight by Congress and public watchdog groups.

Private sector companies have regulatory agencies, such as the Securities and Exchange Commission watching them, and are burdened with reporting requirements similar to government. However, a major difference is that, in most private-sector companies, the “watchdogs” are internal – product managers and other employees. Although the Boards of Directors and shareholders exercise some “watchdog” activity, employees feel that they own the process and benefit or suffer as applicable; therefore, they tend to have the biggest stake in oversight of the process.

Process audits are used often and effectively, but results audits are never used. Also, the private sector realizes that what profit the supplier makes is largely irrelevant, as profit margin is such a small part of the business equation. They focus instead on the success of the supply.

Cultural constraints – mandate to protect the interest of the government.

Mr. Stussie stated that, while the government has to “bend over backwards” to show it is protecting the public interest, this is not necessarily a burden as much as a duty.

An industry participant noted that the private sector has similar initiatives in the form of ethics training. Another industry participant talked about the role of personal accountability and the power of making an example of employees who break the rules.



Conclusions

In summary, there are opportunities for DoD to adopt many of the best commercial practices discussed by industry participants. DoD's ability to adopt these practices may be affected by acquisition paradigms unique to government.

Based upon the information provided at the roundtable and our previous study on acquisition for the Defense Contract Management Command, we offer the following recommendations to help improve efficiency and reduce acquisition cycle time:

Create a best-value knowledge management process.

- Build processes and networks for creating and sharing “make knowledge” and “target pricing” that will support buy decisions and the planning, design, and development of a major best-value knowledge management process.
- Know the vendors' business – examples of this could be to create and maintain vendor files to effectively maximize and manage supply chains, prospect for new partners, and assess the risk of doing business with prospective and existing vendors.
- Develop models for determining “total system value” and impact of the acquisition of components on the end product or related systems.

Redesign defense procurement.

- Develop a system of cross-functional teams where procurement, operations, engineering, and suppliers can work together throughout the planning, design and development and procurement of major systems.
- Organize procurement functions by commodity.
- Re-assess the skills required of DoD buyers: i.e., knowledge of the commodity being acquired, as opposed to the procurement rules.
- Provide training and industry opportunities for the procurement community to help develop technical expertise.
- Explore ways to break down procurements, where cost reimbursement seems unavoidable; to isolate and fix prices for parts that can be procured through commercial means (or government schedules), leaving only the unburdened labor rate for cost reimbursement.
- Consider currently available technologies or suppliers who may be able to rapidly develop technology for procurement of R&D; in cases where R&D must be purchased, consider paying only on deliverables.
- Build “make knowledge” capability in-house to support buy decisions and planning, design and development of major systems. If this is not possible, due to the high demand of the profession exceeding government pay scales, consider bringing suppliers into DoD (the Bose JIT II model), outsourcing procurement functions, or establishing a non-profit corporation to provide the critical buying expertise.

Develop trusted supplier relationships.

- Establish incentives to limit number of suppliers (prime, as well as second- and third-tier suppliers).



OSD (A&T) Price-Based Acquisition Industry Roundtable

- Develop partnerships with suppliers to achieve the economies associated with such a partnership. Encourage major defense integrators to do the same.
- Monitor the suppliers against performance measures other than costs of production to ensure that the suppliers continue to be best value partners.
- Seek to understand cost drivers of suppliers; as opposed to costs of production.
- Develop processes by which suppliers can collaborate in DoD procurement, giving them insight into the warfighter's needs and allowing them to utilize their expertise to determine ways to achieve desired outcomes at the lowest prices.



Appendix A: List of Participants

Companies Represented

Allied Signal, Inc.	Peter Machuga, VP, Strategic Procurement
Arthur Andersen	Bill Herron, Office Managing Partner, <i>Government Services</i>
Bell Atlantic	Alan Polonsky, Executive Director, Corporate Sourcing
Boeing Company	Robert Ingersoll, VP, Contracts and Pricing
	Dean Nordstrom, Senior Manager, Cabin Systems Materiel
Bose Corporation	Lance Dixon, Executive Director, Bose JIT II Center
Daimler Chrysler Corporation	Jeff Trimmer, Director, Operations & Strategy, Procurement
Dyncorp	Charles Hendershot, Senior VP of Operations
Harley-Davidson Motor Company	Garry Berryman, VP, Purchasing
Intel	Jeff Knepper, Director, IT Strategic Procurement
Langford Partners, Inc.	Lynn Langford, Partner
Litton Industries	Larry Cavaiola, VP, Government Relations
Lockheed Martin	Peter DeMayo, VP, Contracts
Mobil Oil	Laurie Acreman, Manager, Global Procurement
Rockwell Collins	Herm Reininga, VP, Operations

Government Participants

Ronald Garant, Under Secretary of Defense (Comptroller)
Karen Grosso, General Counsel
Sue Hunter, Air Force
Dina Hyde, Navy
Joseph LeCren, National Aeronautic and Space Administration
MG Timothy Malishenko, Defense Contract Management Command
Jill Pettibone, Defense Contract Management Command
Sue Quinlan, Defense Contract Audit Agency
Donna Richbourg, Under Secretary of Defense (Acquisition Reform)
David Steensma, DoD Inspector General's Office
Curtis Stevenson, Army
William Stussie, Deputy Assistant Secretary of the Navy
Ric Sylvester, Under Secretary of Defense (Acquisition Reform)



Appendix B: Case Study

Arthur Andersen provided a case study, The James Bond Project, to participants. The facilitator asked the industry participants to consider how to acquire the technology shown on the video. The technology is assumed to be non-existent currently, however, the component parts are based on existing technology. The facilitator posed questions to the participants, which appear below with summaries of the responses.

- 1. Since you cannot develop this in-house, how would you obtain this technology?**
- 2. Given that there are two known vendors, what market research would you perform? How? (NB: Questions 1 and 2 are taken together since the answers were related.)**

It is important to ask, “what is hard about this?” It may be that the component parts of technology are not difficult to procure, but the challenge lies in finding a supplier to integrate the parts into a successful product.

If the two known vendors are trusted and have performed this kind of work (integration of high technology) before, there is no need to look for additional vendors.

If, however, the vendors are not well-suited for this type of work, the following are suggested actions:

- ♦ Ask the two suppliers what additional technology is needed to make this that they don’t already have.
- ♦ Perform research to find out if similar research and development is underway at another company.
- ♦ Look for companies with similar processes that could be adapted to fit this need.
- ♦ Sell the benefits of doing business with the government

3. How do you determine fair and reasonable price?

Target pricing is the most common method. However, to perform target pricing, the buyer has to have a certain amount of “make” knowledge. The assessment of price can have several components, as follows:

- ♦ What do similar products cost?
- ♦ How much do the component parts cost?
- ♦ How did the buyer arrive at the target price? Is there any background available, or concept of what the product should do?

4. How would you assess the value of the product (determine best value), when product and manufacturing knowledge is limited?

Product and manufacturing knowledge should never be limited. The procurement function should be organized by commodity, and those professionals should know as much as possible



about the product they are buying. One participant noted that it is not necessary to know how to completely make something, but rather to be an informed buyer. Ways to get this expertise are the following:

- ◆ Training
- ◆ Visiting suppliers' sites
- ◆ Going to industry conferences
- ◆ On-going research
- ◆ Bring in third-party expertise to perform the function temporarily and work with the in-house staff

Industry does not depend on third-parties to perform this function. As one industry participant said, "nothing replaces technical competency."

5. Since risks are high and you have limited vendors and limited knowledge of the manufacturing processes, what methods would you use to contain / mitigate risk?

"Gatework" is commonly used. This involves performing staged concept and development, with an "off-ramp" at each critical juncture. There should also be careful, thorough planning for risks and contingencies:

- ◆ Use vendors to obtain knowledge prior to procurement.
- ◆ Build in affordable risk levels.
- ◆ Create risk management teams outside of regular procurement.

6. How will you ensure that you obtain the product you want?

In addition to a detailed plan to help mitigate risks, there should be extensive input from appropriate levels of end users at the start of the product. As one industry participant noted, "in this case, James Bond would have to be on your procurement team." Getting good user input involves having the right level of user (the day-to-day user), asking the right questions, and making it easy for the user to offer input.

Also, to ensure you get the product that you want, it is essential to understand your suppliers' business case. You need to understand how making the product fits in with their corporate strategy, and see if the product you are seeking is similar to the products they produce well.



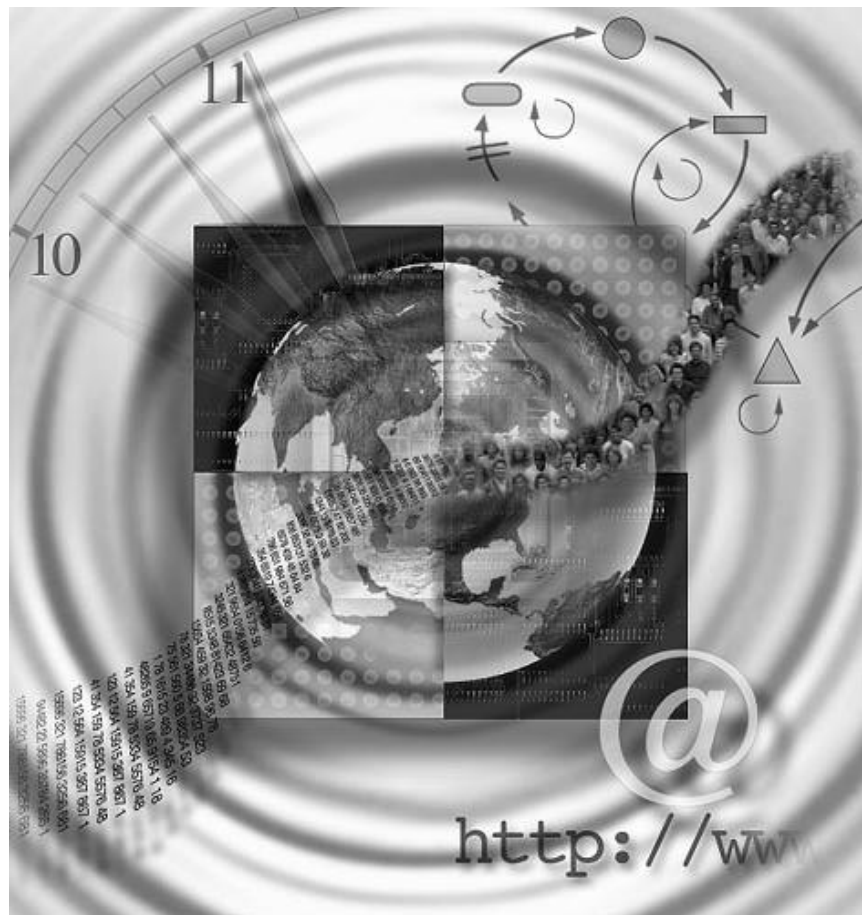
7. How would you finance this project?

Most respondents believe this is a separate decision from the procurement. If financing were part of the decision, many valuable projects would be eliminated because people might think the projects were too expensive.

8. What will you do if there is cost growth during performance?

Most companies insist on cost reduction during the procurement cycle, not cost growth. However, in most cases, the action for cost growth depends on why costs grow. If they grow because of sloppy management or because someone “dropped the ball,” then there may be cause to terminate the project or take disciplinary action (everyone must be held accountable). However, if costs grow because of some part of production that we didn’t know about in advance and couldn’t predict, that is usually okay (they find additional funding if within the concept feasibility). It is still worthwhile to have the product, and now there is better information for the next time we procure something similar.

APPENDIX C:
Understanding Price-Based Acquisition
Prepared by Arthur Andersen LLP



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What is Price-Based Acquisition?

BACKGROUND

In the past, the acquisition process relied on the cost provided by the vendor, with the government contracting officer's technical representative managing the contract on the cost parameters. This arose from the Congress' desire to provide oversight to help ensure that suppliers provided the government the best price available. In a performance-based business environment, the emphasis shifts from cost to price and other best value criteria (e.g., quality, technology, service, and total system value).

A price-based environment is one where market forces and business initiatives determine the price of a product or service, and management is based on performance parameters. Cost-based contracts obligate the buyer to reimburse the supplier for costs incurred, and often to pay an additional fixed fee for development or sunk costs. In these contracts, neither performance nor delivery from the supplier is guaranteed.

Most price-based contracts in industry are fixed price in nature. Industry usually pursues fixed price arrangements unless (1) the risks will result in a contract price containing large reserves for contingencies that may not occur, (2) the risks result in reliable suppliers refusing to agree to a fixed price contract because a significant loss might be incurred, or (3) the use of a fixed price contract could result in the supplier 'cutting corners' in order to avoid taking a loss.

The government buyers often find themselves in the situation described above (high risk which makes it difficult to use fixed price), because they are seeking to acquire research and development services. Industry avoids paying for R&D, seeking instead to utilize existing technology, or to stimulate the market place to develop the technology desired with incentive of future business. In a price-based environment, when cost reimbursement seems unavoidable, buyers perform extensive research to break down large procurements. They isolate and fix prices for as many of the parts as can be procured through commercial means, or for which a price can be estimated.

Trends in industry buying practices are generally consistent. Early 1990's focus on supply chain management moved continuous improvement beyond mere outsourcing. Today, just-in-time delivery reduces buyer inventory and handling costs, yet it requires more integration and teamwork with key suppliers. Global competition and supply chain improvements require procurement to participate in strategic planning. Tactically, procurement joins operations and project teams to achieve outcomes and improvements, not merely compliance. Often, key suppliers join the buyer project teams. These project teams have counterparts in the government, such as the Department of Defense's Integrated Product Teams.

CURRENT APPLICATIONS

Price-based acquisition studies conducted by Arthur Andersen for the Department of Defense Price-Based Acquisition Task Force and the Defense Contract Management Command involved interviewing various world class companies to determine their practices and hosting senior

executive industry/government roundtables. Information from the studies, combined with our firmwide knowledge of Global Best Practices, is described below.

In the highly-competitive business environment, reasonable price is validated by cross-functional target estimating teams. These experts use sound product and market knowledge which is enhanced through Requests For Information (RFI) from suppliers when necessary. Competition is quickly nurtured when a sole source or dominant supplier situation develops. Industry no longer pursues price alone. Reasonable price and/or ownership costs are blended with quality, technology and service as best value factors for supplier selection and retention. An example of supplier retention is Pratt & Whitney, which encourages the involvement and improves retention of its key suppliers through future business leverage. Pratt & Whitney has said that vendor relationships are key to its ability to reduce time to market.

In the price-based environment, there is a strong emphasis on vendor / buyer integration. The Department of Defense has a similar initiative called civil-military integration. Some private-sector acquisition practices are discussed below.

Private-sector companies focus on nurturing vendor relationships. General Motors' (GM) practices in the price-based environment further emphasize the importance of vendor-buyer relationships. GM is currently developing target costs and preferred vendors for 2002-3 GM automobile programs using multiple year agreements. Purchasing strategies are being aligned with business strategies. Creativity teams are examining historical benchmarks and searching across programs for insights into where costs can be reduced. Vendors are reviewed for past performance and percentage of business done with GM as part of a risk assessment program for current vendors. GM sets its purchasing strategy in advance competing new work among the best-qualified suppliers.

One manufacturer chooses its suppliers based upon a Supplier Compliance Index that considers all costs of doing business with a supplier and not just purchase price costs. Various key events or transactions have been defined under the key headings of quality, material, and administration. Using this framework, the company identifies various costs of non-compliance with the terms of the contract (e.g., receiving inspections required \$100/each). By multiplying this cost per unit by the number of occurrences, they are able to compute the non-productive cost per transaction with the supplier. The percent of non-productive costs to the product value is used to determine the total cost index of doing business with this supplier.

The company is currently going through a process of evaluating all suppliers. Based on past performance, the company ranks suppliers in four categories as follows: new, approved, key, and partner. The higher the supplier is ranked, the more favorable are its chances for new awards. The company then negotiates multiple-year contracts with suppliers who win awards. The contracts include the following provisions:

- ✓ Suppliers must adopt continuous cost reduction philosophy savings to be shared.
- ✓ Reductions in price to the company are shared between supplier and company. The manufacturer gives the supplier 75 percent of cost reduction up to a negotiated level. After this, they split the cost reduction equally.
- ✓ The company agrees to increase volume of business with the supplier.

- ✓ The company assists suppliers to improve processes and reduce costs.

Results of these best practices can be dramatic in terms of transaction cost savings. Using a similar approach, another of our study participants is reducing the number of suppliers by two thirds (from 10,000 to 3,500) and giving them longer contracts. Through these relationships, companies are able to reduce costs and improve quality of the products and services they deliver to their customers.

This practice may involve a fair amount of work up front, but it provides real cost reduction benefits. It is particularly effective when used in conjunction with re-engineering efforts, but need not be done simultaneously with it. Areas of focus are as follows:

- ✓ Quality: Inspection, rejection, rework, downtime
- ✓ Material: Early/late delivery, transportation
- ✓ Administrative: Order processing (paper-based vs. EDI), invoicing (paper-based vs. EDI), and engineering services

Industry uses the contract as a framework for enabling successful outcomes and improvements with best value suppliers. In many cases, exclusive industry buyer / seller teams compete with other global teams. Similarly, government projects compete with one another for agency resources. To communicate and compete effectively, industry converts best value criteria to performance parameters monitored via electronic data interchange.

Industry minimizes cost reimbursement arrangements. The trend is to leverage the vendor's development ability prior to any contract arrangement. For example, Daimler-Chrysler involves vendors in the concept development phase and contracts with the successful vendor for the supply of the item. In the automotive industry, it is common for vendors to develop new and improved products to enhance the sale of the vehicle to the consumer. However, industry rarely pursues the scale of development risk that DoD encounters in major weapons systems. Industry sees little value in rationalizing costs and prefers to apply energy and resources to reducing costs over the long term. Industry also leverages future business opportunities to influence both supplier performance and compliance. Our research has shown that the volume of business a preferred vendor in the electronic, automobile and aerospace industry is likely to do with its customer tends to influence positive performance and reduce desire to charge excessive prices.

Often, industry manages its suppliers by establishing performance measures. Through electronic data interchange, buyers and sellers act on variances to key performance parameters. Audits and enforcement are a last resort for determining reasonable cost and dispute resolution respectively. To integrate into buyer supply chain processes, key sellers often locate at the buyer's facility rather than vice versa. Industry uses supplier forums to communicate expectations in the face of changing market forecasts, annual funding changes and competitive realities.

Another industry trend is information exchange and continuous improvement. These have helped replaced audit and enforcement as key tools to meet procurement business objectives. In a price-based environment world class purchasing means mutually constructive focus on outcomes, improvements and adjustments to compete effectively against other teams for customer resources.

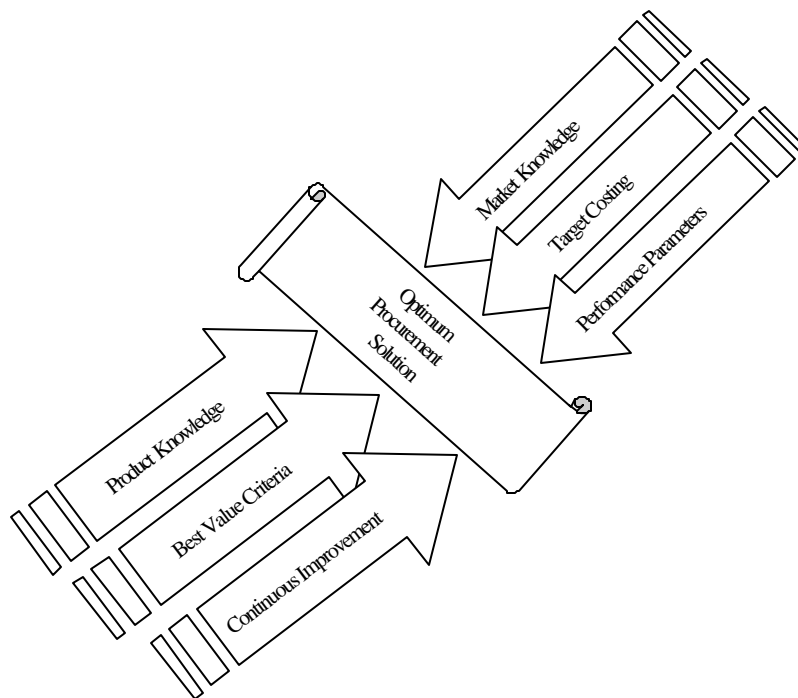
GOALS OF PRICE-BASED ACQUISITION

The goals in private industry procurement practice and in federal government initiatives are quite similar, but the operating conditions vary. Some of the operating condition differences are that in the private industry multi-year projects can be funded, and there are often fewer conflicting political agendas.

Despite the differences in operating environments, the goals to result in a price-based acquisition system are achievable in the federal government and private sector alike. They are as follows:

- ✓ Provide best value goods and services from a globally-competitive national industrial base.
- ✓ Reduce manufacturing and management costs.
- ✓ Eliminate unnecessary direct and indirect cost drivers.
- ✓ Improve cost / schedule / performance / affordability.
- ✓ Eliminate distinction between doing business with the government and other buyers.
- ✓ Promote long-term vendor relationships.
- ✓ Reduce need for oversight.

To conclude, price based acquisition is a package where factors such as market knowledge, product knowledge, target price, continuous improvement, performance parameters and best value criteria



result in an optimum procurement solution. A price-based environment is an environment based on performance and value rather than on “strict” evaluation of cost inputs. While cost data is obtained, the focus is on cost drivers versus absolute precision or accuracy of cost data. Throughout the relationship, the parties partner to reduce the cost drivers and in many cases industry experts price reductions over time.

Suggested Reading:

Name of Study: Master's thesis on Alternative Contracting Methods in the U.S. Army Corps of Engineers

Source: Simoneau, Craig L. MIT Dept of Civil Engineering.

Synopsis: This thesis examines the **contracting** methods used by the United States Army Corps of Engineers (USACE). While USACE typically uses the traditional approach to construction **contracting**, they have recently begun using two forms of a design/build method. The traditional method uses separate design and construction firms. The construction contract is generally a firm fixed- **price** contract awarded in open competition to the lowest responsible bidder.

This study found that there are many disadvantages to using this method, especially when it is used almost exclusively. The design/build approach employs a single organization to perform both the design and construction of a project. The two variations used by the Corps, the One-Step Negotiated process and the two-step Sealed Bidding process provide flexibility to USACE in their construction **contracting**. The primary advantages of the design/build methods are a savings of time, a reduction in costs, a reduction in time-consuming and costly disputes, allowing competition between designs, and the ability to award contracts **based** on quality as well as **price**. The environmental area, mobilization requirements, and base closure projects were all found to be particularly suitable for design/build use.

Name of Study: Making Contracting Work Better And Cost Less: Report of the Contract Reform Team

Source: USDOE, Washington, DC Feb 1994

Synopsis: In June 1993, Secretary of Energy Hazel O'Leary formed a **Contract Reform** Team, chaired by Deputy Secretary Bill White, to evaluate the contracting practices of the Department of Energy and to formulate specific proposals for improving those practices. This report summarizes the results of the work of the **Contract Reform** Team. It recommends actions for implementation that will significantly improve the Department's contracting practices and will enable the Department to help create a government that -- in the words of Vice President Gore -- "works better and costs less" These actions and the deadlines for their implementation are listed. Among other things, they recommend replacing the Department's standard Management and Operating **Contract** with a new Performance-**Based** Management **Contract** and strengthening the Department's systems for selecting and managing contractors.

Name of Study: Report of the Defense Science Board Acquisition Workforce Sub-Panel of the Defense Acquisition Reform Task Force on Defense Reform.

Source: Office Of The Under Secretary Of Defense (Acquisition And Technology)
Synopsis: This report provides three policy recommendations, **based** on the overarching theme of more closely integrating DoD with industry. The Sub-Panel believes that improved integration with industry is the critical element that will enable the acquisition system to perform better, faster, and cheaper in support of the warfighter. The recommended policy initiatives are that DoD should: 1. Restructure its Research, Development, Test, and Evaluation (RDT&E) organizations and associated workforce to enable the Department to make better use of the capabilities of industry and other government agencies, to concentrate in-house capabilities in areas where there is no external capability, and to eliminate duplicative capabilities. 2 Expand the use of **price-based** forms of **contracting** to reduce the cost of doing business with Department of Defense (DoD) for existing Defense contractors and to give DoD access the segments of industry that currently choose not to do business with the Department because of the costs and complexities associated with cost-**based** contracts. 3. Expand the outsourcing of sustainment activities to eliminate duplicative capabilities between DoD and industry, to enable the Department to capitalize on industry's advancements in applying technology to these functions, and to provide better support to the user.

Name of Study: Master's thesis on Fixed-Price-Award-Fee: An Economic Motivational, and Contracting Theory Analysis

Source: Schade, Don F. Naval Postgraduate School Monterey CA
Synopsis: The award fee is a unique incentive structure that provides the government a method of subjective, after the fact evaluation of contractor performance and affords the Government additional flexibility to reward a contractor for above average performance. Additionally, the award fee is not subject to the disputes clause of a Government contract. Use of award fee serves to enhance contractor performance in areas of quality, production management, ingenuity, timeliness, and cost effectiveness. Currently, the award fee is mostly utilized under cost reimbursement contracts. In order to obtain the full benefit of the award fee, its use in fixed **price** contracts should be considered. An analysis from the perspective of economic theory, motivational theory, and **contracting** theory was conducted. In addition, perspectives from Government and private sector **contracting** personnel were obtained to determine the most effective utilization of an FPAF contract.

Name of Study: Government Contracting Options: A Model and Application
Source: Keating, Edward G., Rand Corp., Santa Monica CA
Synopsis: Contractors represent a sizable, and potentially growing, portion of the Air Force's repair system. How should the Air Force design its repair contracts? In this report, we develop an economic model of contractor motivations and behavior and simulate how contractors would respond to different types of contracts. We derive the government's optimal **contract** under varying scenarios. This model of contractor behavior is

useful as a way to quickly and inexpensively test different types of contracts. Further, models are a well-developed and accepted part of economic theory, and that research is utilized here in the construction and interpretation of the model. We model an aircraft system that experiences stochastic failures. Broken parts enter the repair system irregularly. The contractor must repair the broken parts and/or replace them with spare parts to maintain a specified aircraft availability level. The contractor has a variety of choice variables, e.g., repair capacity and quality. We assume the contractor makes these choices **based** on what course of action will prove best for the contractor, given the **contract** provided by the government. Meanwhile, the government chooses the **contract** form, which may include stipulations regarding a fee per unit repaired, a fee per spare required, and/or a lump-sum fee that does not vary with the number of units repaired or spares needed. The government knows the contractor will maximize for its own benefit in response to the **contract** provided. In the model, the government must provide the contractor with a combination of fees and a lump sum that is lucrative enough ex ante (ahead of time) to induce the contractor to participate in the **contract**.

Name of Study: A Case Study of Magnavox As A Model For Process Oriented Contract Administration Services (PROCAS) Implementation

Source: Dollase, Steve. Naval Postgraduate School Monterey CA

Synopsis: This thesis examines the implementation of the Process Oriented **Contract** Administration Services (PROCAS) program at Magnavox Electronic Systems Company in Fort Wayne, Indiana, one of the seven pilot sites for the program. PROCAS is a Defense **Contract** Management Command (DCMC) initiative designed to apply the tools of total quality management, including cross-functional teaming, continuous process improvement, and empowerment, to the **contract** administration process. PROCAS supports DCMC's performance **based** management philosophy, which strives to allocate resources, **based** on assessed contractor risk. The study describes the development, objectives, and components of the PROCAS program.

Implementation of PROCAS at Magnavox is analyzed to determine the factors that contributed to the success of the initiative. Barriers to implementation and problems with the implementation are identified and discussed. The benefits of PROCAS for both the Government and Magnavox are analyzed. The study concludes that the implementation was successful, and recommends continuing support of PROCAS by DCMC. Potential areas for expansion of the PROCAS philosophy are identified. The study shows the value of PROCAS in facilitating a total quality transformation of an organization, and in improving the efficiency and effectiveness of Government **contract** administration.

Name of Study: Strategic Sourcing

- Source:** RAND, 1997. Pint, Ellen M. and Laura H. Baldwin, Santa Monica:
Synopsis: This report describes a review of the economics and business management literatures on issues related to outsourcing. It discusses recommendations regarding the selection of activities for outsourcing and, given the decision to outsource, how to structure contracts and manage buyer/seller relationships. It should be of interest to managers and analysts concerned with support matters, to support services managers and contracting officials in military departments and the Office of the Secretary of Defense.
- Name of Study:** Contractual Component Repair Policy: A Key to Improving Depot Responsiveness
Source: RAND, 1994. Chenoweth, Mary E., and John B. Abell. Santa Monica, CA:
Synopsis: This report outlines the major steps involved in managing and executing contractual component repair. Then it assesses contractual repair responsiveness in terms of repair flow times for a select group of components. It also suggests directions that the Air Force might take and hypothesizes that it might evaluate that promise enhanced contractual repair responsiveness.
- Name of Study:** Government Contracting Options: A Model and Application
Source: RAND, 1996. Keating, Edward G. Santa Monica, CA:
Synopsis: This report provides an economic model of contractor motivations and behavior and simulates how contractors would respond to different types of contracts.

Common Issues and Concerns

In a price-based acquisition process, setting a reasonable price is the key element for the buyer. A reasonable price is determined by knowing the market, having product knowledge, and making decisions based on best value criteria and effective use of competition. In private industry, long term buyer-vendor relations requires mutual trust and hence the need for ethical dependable suppliers. Our findings from a prior study of private industry procurement practices regarding some common civil and federal government concerns are discussed below, and categorized as follows:

- ✓ Setting a reasonable price
- ✓ Effective use of competition
- ✓ Obtaining Best Value
- ✓ Ethical, dependable suppliers
- ✓ Continuous improvement

SETTING A REASONABLE PRICE

Setting a reasonable price is a concern for most procurement organizations in private industry. Price is not necessarily the most important element of best value criteria. The biggest advantage in the private sector is that the procurement team has the “make” knowledge, i.e. the buyer knows all that is involved in the making of the product (Sun Micro System knows in detail what is involved to make a micro chip). Industry also has the ability and resources to conduct a market analysis to refine their in-house estimate. The automobile industry in particular has dedicated cross-functional assets for target pricing and analysis.

Reasonable price is strongly influenced by both competition and the possibility of competition. Dominant small suppliers realize that overpriced products may be reverse engineered (find or promote the manufacture of a similar product). The loss of future business is a penalty that most vendors will not risk with a large program buyer.

The automotive and the aerospace industry employ the concept of long-term relationships. This concept involves the vendors and the buyer becoming a team and investing together to continuously improve to maintain competitive prices against other teams competing for customers’ resources.

EFFECTIVE USE OF COMPETITION

There is a common concern for how and when to use competition in acquisition. The government has traditionally been consumed with the notion of “free and open competition”. The theme for effective use of competition in the commercial world is selective competition. Industry tends to compete when competition presents an advantage to them, which may be when they need to procure a new product, change vendors, or periodically analyze the market. Competition is usually restricted to a select few suppliers and is not open to all eligible vendors. The mere potential for competition is viewed to be an adequate means of obtaining the best value from a vendor.

Industry utilizes competition in achieving best price and value. This strategy is utilized both at the outset and during the production cycle when other vendors are encouraged to present better methods and products for existing contracts. Multiple buyers and sellers provide a platform where competition can thrive and serve as an important tool to encourage continuous improvement.

Competition is not restricted to the initial stages of the buyer-vendor relationship but is fostered throughout the life cycle. Buyers generate scorecards with performance measures that the suppliers are required to meet. Score cards are a means of tracking the service and technical performance of the vendor. The buyer stipulates certain measures of performance, e.g., on-time delivery, participation in share-in-savings, continuous improvement, engineering performance, etc., on which the vendor is rated. This score card is a means of comparing and measuring performance.

This use of score cards is another form of competition after the contract is let. Through the score card process, the vendors are always trying to prove their ability to compete in anticipation of earning future business.

After the contract is awarded, and production is underway, other vendors may submit improved methods or products to the industry buyers. These proposals are carefully reviewed to identify value-added for the buyer and the consumer. If an opportunity is evident, the vendor of record is given a chance to meet or beat the competition. In the event the vendor of record cannot meet the new best value expectations, they are faced with a possibility of being phased out. An example of this change is in the automotive industry, when new vendors came out with electronic burn control systems, the traditional carburetors were phased out.

OBTAINING BEST VALUE

Both industry and government alike are constantly in search of opportunities for best value of products and services. Private companies utilize the relationship-building technique to achieve best value in most cases, rather than cost accountability. Best value carries different meanings in different industries. The generic criteria used, however, are fairly consistent.

1. Technology

Does the vendor have the necessary technology solutions to provide the product/services?

2. Quality

What is the vendors' quality track record?

3. Service

Has the vendor been able to provide delivery, inventory management and other services promised in the past? Does the vendor have capability to innovate and improve in the future?

4. Price

Are the prices competitive with the market (not necessarily the lowest)?

Combined best value factors are the major selection criteria and are the basis for setting performance parameters in industry buying practices. The sequence above is a typical order of precedence but individual product/service needs may impact the order.

Long-term vendor relationships are another ingredient of a best value. Knowing the vendor and being able to influence the operations of the vendor to suit the buyers needs through continuous improvement are considered important factors in vendor selection. Through suggestion programs and stretch targets established by the industry, vendors are provided the opportunity to maintain the relationship by investing in continuous improvement of the products or services being produced.

ETHICAL, DEPENDABLE SUPPLIERS

Perhaps the most critical concern in converting to a price-based acquisition system is whether it is possible to sufficiently trust suppliers to provide fair and reasonable prices. Industry has come to believe that an ethical and dependable supplier willing to improve is one that merits a long-term relationship. There are many examples of situations where supplier representatives get involved in the buyers' decision-making process and vice versa -- working as a team to improve and beat the competition in the race for consumer resources.

Industry recognizes the importance of building and maintaining healthy long-term relationships with vendors if the buyers are to succeed in achieving their goals. In the past, industry used tools such as audits and cost evaluation to "police" its vendors. These actions didn't succeed. During the 1990's, when faced with market challenges such as the recession and just-in-time inventory, industry needed to encourage innovation and cost reduction. Many companies therefore shifted their approach and are focused on building business relationships to meet their goals. However, ethics and fair dealings are taken seriously and ethical contract provisions will be enforced when necessary.

The industry approach today is mutual trust. During a roundtable session conducted by Arthur Andersen on price-based acquisition, an industry participant said, "you be an ethical dependable supplier for me, and I will be an ethical dependable buyer for you." This sentiment highlights the view that the buyer must live up to their commitments as well as the seller.

This depth of the buyer-seller relationship can take different forms depending on the nature of the product/service provided. A vendor considered to be strategic is very closely integrated with the buyer, and a critical vendor may receive reasonable concessions as an incentive; yet routine buys yield no vendor alignment at all.

CONTINUOUS IMPROVEMENT

Many companies have found that holding suppliers to continuous improvement responsibilities is more efficient for long-term price reduction than simply focusing on lowering a supplier's prices. Continuous improvement is considered by industry to play a major role in the long-term relationship. It builds and reflects trust. Continuous improvement is intended to enhance the product and reduce the price, yet it also generates a sense of teamwork and rapport.

Industry adopts several tools and techniques for continuous improvement to ensure that it has all aspects covered. Some utilize the Japanese “Kaizen” methodology, in addition to other tools such as quality measures like statistical process control (SPC), ISO9000 or QS90. Buyers and strategic sellers often train and execute improvements side-by-side. Industry places significant emphasis on training and development so that mutual problem solving will be enhanced by continuous improvement techniques.

Suggested Readings:

- Name of Study:** Aggressive sourcing: a free-market approach.
Source: Sloan Management Review, September 22, 1997
Synopsis: Recently enacted procurement reform laws (over the past two years) are beginning to change the way the federal government buys large information systems technology. Recent information technology buys that reflect the trend toward breaking information systems buys into pieces, making multiple awards, and shortening acquisition schedules are presented.
- Name of Study:** Chrysler, Suppliers Teamwork Today: Automaker Tears Down Walls To Build Its Own Version Of 'Keiretsus'
Source: Automotive News. July 18, 1994
Synopsis: Chrysler used to employ 1,200 engineers to develop a vehicle, said Fred Hiber, an executive engineer for the company's large-car platform. The job still requires 1,200 engineers, he said, but 600 of them now work for suppliers. Gone is traditional bidding at Chrysler. Instead, the company chooses suppliers years ahead of production and guarantees their contracts. In return, suppliers are expected to invest heavily to boost quality and cut costs. The new pattern brings exceptional new opportunities to large, well-financed suppliers such as Johnson Controls. They forge tighter-than-ever bonds with the automakers and often win lucrative sole-source contracts.
- Name of Study:** Supplier Development: Current Practices And Outcomes
Source: International Journal of Purchasing and Materials Management. March, 1997
Synopsis: This article presents the results of a survey on supplier development. The research indicates that buying firms engage in a variety of supplier development activities. The outcomes and benefits from supplier development, which are determined from a range of measures, e.g., measures of incoming defects, on-time deliveries, and perceptions of the buyer-supplier.
- Name of Study:** VW, Suppliers Work Side By Side, Seek Big Gains In Productivity, At 'Factory of The Future' In Brazil
Source: Automotive News. June 09, 1997
Synopsis: Supplier/manufacturers work together using 450 employees of seven suppliers that share space under the same roof. VW employs 140

engineers, designers, supervisors and administrators - but not one assembler. It is Volkswagen AG's factory of the future; the controversial project launched two years ago by J. Ignacio Lopez. By having suppliers work together, VW hopes to achieve unprecedented productivity. VW uses escape clauses in its contracts to drop suppliers that don't perform. Additional clauses used allow VW to seek out non-partners with new technology.

Name of Study: Developing Co-Operative Buyer-Supplier Relationships: A Case Study Of Toyota.

Source: Journal of Management Studies. May, 1998

Synopsis: The purpose of this paper is to consider factors that may influence the development of co-operative buyer-supplier relationships within a western context. A case study is used to illustrate the developing relationships between an automotive manufacturer, Toyota Australia, and its suppliers, as a part of Toyota's new supplier strategy.

Name of Study: Applying Commercial Processes to Defense Acquisition

Source: National Contract Management Journal 1997: 11-20.

Synopsis: For a number of reasons, both real and perceived, many dual-use capable firms are reluctant to do business with the DOD. Government work comes with a reputation for excessive and burdensome oversight, compliance, and reporting requirements. Although these companies are willing to provide commercial products to the DOD on normal business terms, they are unwilling to change their internal operations to produce military-unique products, especially for what is perceived to be a small, one-time customer.

Name of Study: Real World Practices Reach Government Infotech Buying

Source: Purchasing, March 6, 1997: 23-24.

Synopsis: Recently enacted procurement reform laws (over the past two years) are beginning to change the way the federal government buys large information systems technology. Recent information technology buys that reflect the trend toward breaking information systems buys into pieces, making multiple awards, and shortening acquisition schedules are presented.

Name of Study: OEMs, Suppliers & the New Competitive Landscape

Source: Automotive Manufacturing & Production, April 1997: 67-69

Synopsis: The long-term cost reduction agreements that domestic automakers have with their suppliers are currently inadequate to allow the OEMs to remain competitive internationally.

Name of Study: Pricing: A Major Hurdle in Acquisition Reform

Source: Contract Management, April 1998

Synopsis: This article gets to the heart of the DCMC question about how the commercial sector handles pricing of "one-of-a-kind" products while

avoiding unfair prices. The authors summarize commercial best practices and recommend a pricing model for the government based on lessons learned from the private sector.

- Name of Study:** Textbook: World-Class Contracting: 100+ Best Practices for Building Successful Business Relationships
- Source:** Garrett, Gregory A., Arlington, VA: ESI International, 1997.
- Synopsis:** A textbook-type presentation of buyer-seller best practices for contracting. There are several excellent graphics summarizing key aspects of contract management. For example, on pp.4-5 six phases of contracting are outlined in separate checklists for buyer and seller. Then on p. 59 flow charts comparing different contracting methods are presented (e.g. competitive bidding, competitive proposals or negotiations, and noncompetitive negotiation). Rather than offering blazing insights about price versus cost considerations, this book's central approach is that the entire contract is a negotiated relationship.
- Name of Study:** America's Army and Acquisition Reform -- Our Keys to Success
- Source:** Contract Management Magazine, August 1998, pp. 20-25.
- Synopsis:** Article addresses key issues in acquisition reform through the perspective of the Army's progress. The author applauds the move toward output contracting, but bemoans that industry is providing too little in terms of best practices for incentive contracting.

Acquisition Processes

The following two process diagrams depict, at a high level, the purchasing process at the Department of Defense (DoD) and in industry. The DoD process was selected as an example of a typical federal government process. The industry diagram is based on information obtained from Arthur Andersen's global best practice research, interviews, roundtable discussions, and other industry literature. It is intended to illustrate the fundamental differences between the government and industry process.

GOVERNMENT

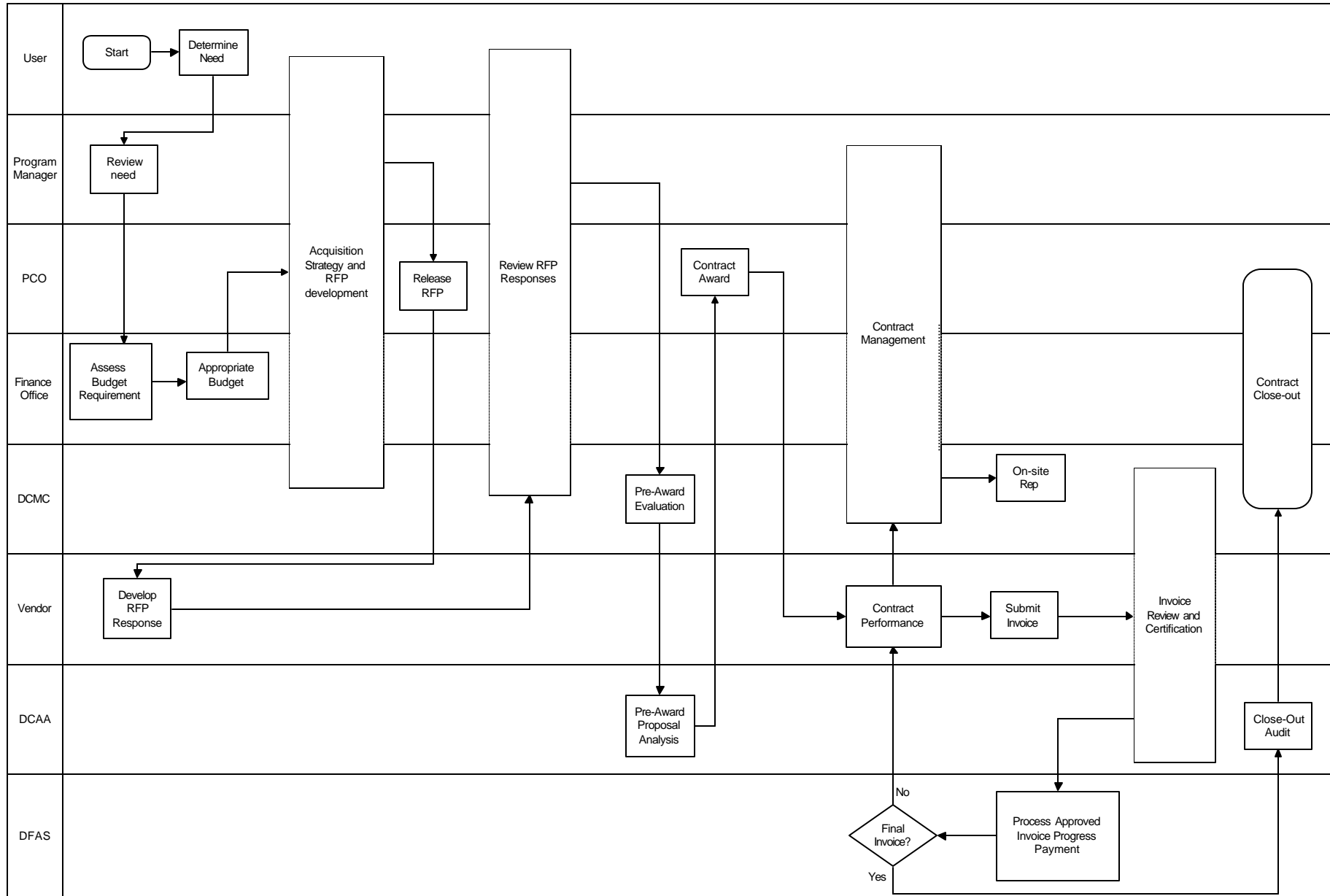
- ✓ The user determines the needs.
- ✓ A Program Manager reviews the needs.
- ✓ Budget issues are resolved at the finance office.
- ✓ Assuming approval of finances the RFP is developed and Acquisition strategy is determined. This process involves the user, Program Officer, Procuring Contracting Officer (PCO), and in some cases the Administrative Contracting Officer (ACO). In DoD, the Defense Contract Management Command (DCMC) serves as the ACO.
- ✓ The Request For Proposals (RFP) is released to the vendors who prepare and return responses.
- ✓ A team reviews these responses, which may be the same team that developed the RFP.
- ✓ In the DoD environment, a pre-award survey is done by DCMC including a pre-award proposal analysis by Defense Contract Audit Agency (DCAA).
- ✓ A contract award is then completed, in complex buys DCMC representative(s) may be stationed at the vendors location of operation.
- ✓ The PCO, DCMC (ACO), and program manager are involved in the contract management/oversight
- ✓ DCMC and DCAA audit interim invoices. Prior to contract closeout by PCO, finance and DCMC, final invoices are audited by DCAA and finance.

GENERIC INDUSTRY

- ✓ The requirements are developed by product managers and engineering with a knowledge feed from the market/product knowledge teams.
- ✓ Financial approval is sought to procure the product/service.
- ✓ The procurement division is then involved in the creating the requirement documentation and soliciting vendor responses.
- ✓ From hereon the negotiation is done by the product manager, engineering, market/product knowledge group, procurement, and finance.
- ✓ Performance is monitored by engineering, product manager, procurement, and finance.
- ✓ Invoice certification and close out of the contract is done by the product manager, procurement, and finance.

GENERIC DoD PROCESS

(representative of generic government process)



GENERIC INDUSTRY PROCESS

